

REMARKS

In the present Amendment, claim 10 has been amended to recite that m is 2 or more.
This amendment is supported by the specification, for example, Figs. 1 and 20-25.
Claims 1-9 were previously canceled.
No new matter has been added and entry of the Amendment is respectfully requested.
Upon entry of the Amendment, claims 10 and 11 will be all the claims pending in the application.

I. Drawings

The Examiner has not confirmed that the drawings filed with the application on December 15, 2003 have been accepted. Applicant respectfully requests that the Examiner acknowledge such acceptance in the next PTO communication.

II. Response to Rejection Under 35 U.S.C. § 103

Claims 10 and 11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the “admitted prior art” (pages 4-5 of the present specification).

Applicant respectfully submits that the present claims are patentable over the “admitted prior art” for at least the following reasons.

First, when increase of production efficiency is the only objective to pursue, reduction of waiting time in the course of conveying a substrate from a substrate-molding machine to a dye application mechanism is a major matter of concern. In this point of view, as is known from the

Queueing Theory, it is most efficient to shorten the average service time (i.e., processing time by a dye application mechanism) with respect to the average arrival time (i.e., a time period beginning from the time when a substrate leaves a substrate-molding machine and ending at the time when the substrate arrives at the back of the queue to be put into a dye application mechanism).

Because there is a technical limit to shorten the processing time of a single dye application mechanism, one possible solution is to increase the number of the dye application mechanisms, so that an apparent processing time can be shortened. Conventionally, two or more of dye application mechanisms have been disposed for one substrate-molding machine based on the above-mentioned idea.

In addition, when one substrate-molding machine forms two or more substrates at a time, an apparent average arrival time is shortened. Therefore, further more dye application mechanisms are required to shorten the average service time.

When four or more dye application mechanisms are disposed for two or more substrate-molding machines to shorten the above-mentioned processing time, the number of machines and mechanisms for maintenance increases, thereby requiring spacious facility. Further, when one substrate-molding machine forms two or more of substrates at a time, the number of the dye application mechanisms may increase exponentially. In this case, an extremely large number of machines and mechanisms are required and subsequently be maintained.

On the other hand, depending on the forming capability of a substrate-molding machine, the average arrival time (i.e., a time period from the time when a substrate leaves a substrate-

molding machine until the time when the substrate arrives at the back of the queue to be put into a dye application mechanism) may be substantially the same as the average service time (i.e., processing time by a dye application mechanism). In this case, one dye application mechanism is sufficient for one substrate-molding machine. Therefore, when two dye application mechanisms are disposed for one substrate-molding machine, a utilization rate of dye application mechanisms becomes extremely low, resulting in decreased production efficiency.

Further, because a dye solution is applied onto a substrate shortly after the substrate is molded, it is necessary to make the substrate cool enough for application of the dye solution. In this aspect, since the queue time for the substrate to be put into the dye application mechanism can be utilized as a cooling time, the queue time is not necessarily shortened close to zero.

In the present invention, a plurality of substrate-molding machines, each of which may form one or more substrates at a time, are used, and the number of the dye application mechanism with respect to the number of the substrate-molding machines meets a relationship of $n/m < 2$, wherein m represents the number of substrate-molding machines and n represents the number of dye application mechanisms. As the results, the production line can be simplified, the quality control can be easily performed, and the maintenance cost can be reduced, making it possible to realize a small scale of the production equipment and reduce the installation space so that the low price of the information-recording medium produced thereby may be realized and the improvement in yield may be achieved.

In view of the foregoing, Applicant respectfully submits that the present claims are not obvious over the "admitted prior art" and thus the rejection should be withdrawn.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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